United States Department of Agriculture
Natural Resources Conservation Service

Idaho Water Supply Outlook Report February 1, 2010

Photo Credit: Bill Schaefer, Idaho State Journal, Pocatello, Idaho

February 1st snowpacks are 60-80% of normal for most basins in Idaho. The most troubling conditions exist in the Upper Snake River basin in Wyoming and eastern Idaho where the snowpacks are struggling to stay above 60% of normal, making it the sixth leanest winter in the last 50 years and the tenth lowest since 1919. Despite good reservoir carryover storage from last year, water users should prepare for the possibility of water shortages especially if the coming months bring less than normal precipitation.

Basin Outlook Reports
and Federal - State – Private Cooperative Snow Surveys

For more water supply and resource management information contact:

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How forecasts are made

Most of the annual streamflow in the western United States originates as snowfall that has accumulated in the mountains during the winter and early spring. As the snowpack accumulates, hydrologists estimate the runoff that will occur when it melts. Measurements of snow water equivalent at selected manual snow courses and automated SNOTEL sites, along with precipitation, antecedent streamflow, and indices of the El Niño / Southern Oscillation are used in computerized statistical and simulation models to prepare runoff forecasts. These forecasts are coordinated between hydrologists in the Natural Resources Conservation Service and the National Weather Service. Unless otherwise specified, all forecasts are for flows that would occur naturally without any upstream influences.

Forecasts of any kind, of course, are not perfect. Streamflow forecast uncertainty arises from three primary sources: (1) uncertain knowledge of future weather conditions, (2) uncertainty in the forecasting procedure, and (3) errors in the data. The forecast, therefore, must be interpreted not as a single value but rather as a range of values with specific probabilities of occurrence. The middle of the range is expressed by the 50% exceedance probability forecast, for which there is a 50% chance that the actual flow will be above, and a 50% chance that the actual flow will be below, this value. To describe the expected range around this 50% value, four other forecasts are provided, two smaller values (90% and 70% exceedance probability) and two larger values (30%, and 10% exceedance probability). For example, there is a 90% chance that the actual flow will be more than the 90% exceedance probability forecast. The others can be interpreted similarly.

The wider the spread among these values, the more uncertain the forecast. As the season progresses, forecasts become more accurate, primarily because a greater portion of the future weather conditions become known; this is reflected by a narrowing of the range around the 50% exceedance probability forecast. Users should take this uncertainty into consideration when making operational decisions by selecting forecasts corresponding to the level of risk they are willing to assume about the amount of water to be expected. If users anticipate receiving a lesser supply of water, or if they wish to increase their chances of having an adequate supply of water for their operations, they may want to base their decisions on the 90% or 70% exceedance probability forecasts, or something in between. On the other hand, if users are concerned about receiving too much water (for example, threat of flooding), they may want to base their decisions on the 30% or 10% exceedance probability forecasts, or something in between. Regardless of the forecast value users choose for operations, they should be prepared to deal with either more or less water. (Users should remember that even if the 90% exceedance probability forecast is used, there is still a 10% chance of receiving less than this amount.) By using the exceedance probability information, users can easily determine the chances of receiving more or less water.

IDAHO WATER SUPPLY OUTLOOK REPORT

February 1, 2010

SUMMARY

Three months of below normal precipitation best summarizes Idaho snowpack. November, December and January are our biggest precipitation months, accounting for about 40% of the annual precipitation. Add in February precipitation, and nearly half of our annual precipitation falls between November and February. The lowest snowpacks are half of average in the Coeur d'Alene, St. Joe, North Fork Clearwater, Gros Ventre in Wyoming, Willow Creek in eastern Idaho, and Mink Creek in the Bear River basin. The Owyhee basin hosts the highest snowpack at 95% of average. A few other smaller isolated basins around the state are also near average. This is a typical El Nino pattern with better snow levels in the southwest US and the least in the Pacific Northwest. It is unusual that some SNOTEL sites in the Boise basin have more snow water than the Clearwater sites. Based on an index of over two dozen SNOTEL sites, the Snake River snowpack above American Falls Reservoir is the 6th lowest in the last 50 years. The data record for Lewis Lake Divide SNOTEL site in Yellowstone National Park starts in 1919 and shows the snow this year is the 10th lowest on record. Streamflow forecasts mirror the low snow levels and are the lowest at 45-49% of average in the Spokane, American Falls Inflow, and Bear River at Stewart Dam. The Snake River near Heise is forecast at 57% of average. The highest forecasts are about 80% of average for the Clark Fork and Pend Oreille Lake Inflow that drain into northern Idaho from Montana. Elsewhere across Idaho, many streams are forecast in the 60-75% of average range. The good news is the reservoir storage is above average across most of the state and will help buffer impacts of the below normal streamflows. However, the Surface Water Supply Index, which combines reservoir storage and projected streamflow, illustrates surface agriculture supplies may be marginally adequate in the Wood and Lost basins. History tells us that there is little hope for snow to recover to normal levels by April 1 given current conditions. However, the weather pattern is active as of the first week of February and any storms will help the numerous users and industries that rely on this mountainous snowpack in the winter to produce our summer streamflow.

SNOWPACK

Idaho's snowpacks range from fair to poor. The best snowpacks are in the Owyhee basin at 95% of average; next are the Weiser and Lemhi at 83%. Other basins across southern Idaho with their headwaters in northern Nevada are 70-80% of average and are benefiting from the El Nino weather pattern that is supplying abundant moisture to parts of the California and the desert Southwest. The Boise, Payette, Salmon and Panhandle Region basins are 70-78% of average. Snowpacks in the 60-70% of average range include the Bear, Henrys Fork, Upper Snake, Big Lost, Salmon and Clearwater basins. The lowest snowpacks are 50-55% of average in the Coeur d'Alene, St. Joe, Palouse basins and the Hoback drainage, which is a headwater tributary to the Snake River in Wyoming.

The entire Upper Snake River is in desperate need of more snow. Taken as a whole the Snake River above American Falls is currently recording 63% of its normal snowpack. An index combining 28 snow measuring sites in the basin above American Falls shows that this is the 6th lowest snowpack in 50 years. Focusing on the Wyoming side of the basin, the Snake River basin above Palisades Reservoir is the 5th lowest snowpack in the last 50 years; an analysis of this April 1 snow index shows that of the nine other lowest snow years there were five years when April 1st snowpacks failed to even reach the average February 1st amount and the other five did not reach the average March 1st amount. History is therefore telling us there is little hope for snowpacks in the Upper Snake to recover by spring. To further emphasize the lack of snow, consider one of our oldest sites, Lewis Lake Divide in Yellowstone National Park where measurements date back to 1919. At 7,850 feet Lewis Lake is our single most important site in the Snake River headwaters. This winter, Lewis Lake Divide has its 10th lowest snow out of nearly a century of data. The current snow water is 12.1 inches; the February 1st average is nearly twice that at 23.1 inches. Recent years with less snow water include 1981 with 11.4 inches, 2001 with

9.6 inches, and the record low year 1977 with only 4.8 inches. Just twelve years ago in 1997, this site was record high on February 1 at 44.9 inches of snow water, 194% of average.

PRECIPITATION

January precipitation followed the below normal precipitation trend that started in November across most of the state. November, December and January are typically the biggest precipitation months; accounting for about 43% of the annual precipitation in the west-central mountains. Less than normal precipitation in each of the past three months has resulted in near record low precipitation amounts since daily precipitation records began 20 years ago for 13 SNOTEL sites that are scattered in the Bear River basin, Upper Snake basin in Wyoming and the Clearwater basin of Idaho. The least amount of January precipitation fell in the Coeur d'Alene, St. Joe, Clearwater, Pacific, Buffalo and Gros Ventre basins ranging from 55-60% of average. Near average January precipitation fell in a few isolated basins around the state including the Weiser, Boise, Camas, Little Wood, Mud Lake area, and Portneuf basins. Water year-to-date precipitation is best at 90-92% of average in the Owyhee and Weiser basins. A number of basins in central Idaho have had 80-87% of average precipitation since October 1st, while the Bear, Salmon, Payette, Willow, Blackfoot and Portneuf basins have seen 70-78% of average. The lowest water year-to-date percentages are in the Upper Snake, Henrys Fork, Clearwater, and Spokane basins at 65-70% of average.

RESERVOIRS

The better than average storage in Idaho's reservoirs will help buffer the impacts of the below normal projected streamflows, but will not satisfy all the water supply needs. The reservoirs are simply not large enough to save all the melting snow water for use later this summer. Water managers will be monitoring snow levels, inflows and spring weather closely when the melt season starts to ensure reservoirs fill as much as possible while mitigating any high releases necessary from variable weather conditions. Reservoirs north of the Snake River are in better shape than the southern ones. Owyhee Reservoir is the lowest at only 42% of average and Bear Lake is 60% of average. Despite low levels of water stored, the size of these reservoirs should allow them to provide adequate irrigation supplies even with limited inflows. Oakley and Salmon Falls reservoirs are about 80% of average and are currently storing about half their normal irrigation demand; inflows are projected at only 68% and 50% of average, respectively. Magic Reservoir is storing nearly three times the amount from last year and is 92% of average, but inflows are only predicted at 56% of average. Little Wood and Mackay reservoirs are storing 130% of average but inflows are only projected in the 55-60% of average range. The Boise and Payette reservoir systems are storing average amounts and should have adequate supplies. Palisades Reservoir and Jackson Lake have a combined storage of 114% of average; 78% of capacity. This level is about 500,000 acre-feet more than in January 2001, a very similar snow year in which the streamflow was only 47% of average. Dworshak Reservoir is 100% of average and 62% full. With limited inflows expected, reservoir and water users should anticipate reservoirs being drawn down earlier than normal once irrigation demand outpaces inflow. Many reservoirs will be at their minimal levels by season end, unless a significant change in weather occurs.

Note: NRCS reports reservoir information in terms of usable volumes, which includes both active, inactive and in some cases, dead storage. Other operators may report reservoir contents in different terms. For additional information, see the reservoir definitions in this report.

STREAMFLOW

February streamflow forecasts predict very low runoff across most of Idaho this summer. With below normal precipitation for the third straight month, forecasts did not change much from the volumes published in January. We hesitated to publish such low volumes last month with more than half the winter still to come as there was still time for a turn around. Now, with less than half of winter ahead of us and long term weather forecasts predicting drier than normal conditions, these forecast numbers have greater confidence. Current forecasts range from 44-80% of average. The lowest forecasts are about 44% of average for the Spokane near Post Falls. The Snake River near Heise is forecast at 57% of average, and forecasts increase to 55-65% in the Wood and Lost basins. The Boise, Payette and Salmon rivers are forecast at 70% of average. The Owyhee and Clearwater rivers are forecast at about 65% of average. The Panhandle streams are forecast at a wide range of 50-80% of average; lowest in the Spokane, St. Joe and Coeur d'Alene and highest further north in the Kootenai, Moyie and Clark Fork. Unless otherwise stated, the forecast numbers mentioned in this report are always the 50% Chance of Exceeding forecast, which means there is a 50% chance the volume will be greater or less than the given value. If conditions continue to be drier than normal then the observed flow this summer will be less than the 50% chance of exceeding forecast and may be better represented by the 70% or 90% chance of exceedance forecast. It is important that water users make informed decisions about which forecast to use.

Note: Forecasts published in this report are NRCS guidance forecasts. NRCS is using SNOTEL data in a timely manner to provide timely streamflow forecast for users. Official jointly coordinated and published forecasts by the USDA Natural Resources Conservation Service and the US Department of Commerce, NOAA, National Weather Service are available at the joint west-wide Water Supply Outlook for the Western US at http://www.wcc.nrcs.usda.gov/wsf/westwidc.html.

RECREATION

Winter recreation has continued to improve since mid-December as a number of storms brought snow to Idaho. While snow depths are not nearly as deep as usual, there is enough to allow for all types of winter recreation in the mountains. The weak snowpack that we mentioned last month remains a lingering menace and has resulted in four avalanche fatalities in Idaho so far this winter. There simply has not been enough snow to bury these weak layers under enough snow so that they are no longer sensitive.

If you are a water recreationist, look towards spring and summer river running. Keep in mind that Idaho's shallow snowpacks will melt earlier than normal this year. While streamflow volumes are only predicted to be about 60-75%, this does not mean that the whitewater season will not be thrilling. Peak snowmelt streamflows will occur earlier than in an average snow year allowing recreational opportunities to occur earlier in the summer. You may be interested in predicting the snowmelt driven peak streamflow using the Snow Melt / Peak Streamflow Relationships information on the peakflow webpage: http://www.id.nrcs.usda.gov/snow/watersupply/peakflow.html
This information will give you a general idea when the peak streamflow will occur based on the peak snow and the amount of snowmelt at a given SNOTEL site. For example, the Middle Fork of the Salmon generally peaks when half the maximum snow at Banner Summit SNOTEL is melted. Although Banner Summit's snow will probably not reach its maximum until the start of April, it is nonetheless an interesting relationship to understand or share with river running friends as you anticipate summer fun. If the big whitewater is not your cup of tea, then you can look forward to earlier dry land recreation or earlier low flows for fishing.

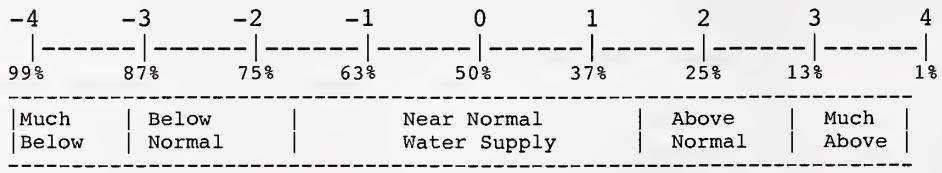
IDAHO SURFACE WATER SUPPLY INDEX (SWSI) *As of February 1, 2010*

The Surface Water Supply Index (SWSI) is a predictive indicator of surface water availability within a watershed for the spring and summer water use season. The index is calculated by combining pre-runoff reservoir storage (carryover) with forecasts of spring and summer streamflow. SWSI values are scaled from +4.0 (abundant supply) to -4.0 (extremely dry), with a value of zero indicating a median water supply as compared to historical occurrences. The SWSI analysis period is from 1971 to present.

SWSI values provide a more comprehensive outlook of water availability by combining streamflow forecasts and reservoir storage where appropriate. The SWSI index allows comparison of water availability between basins for drought or flood severity analysis. Threshold SWSI values have been determined for some basins to indicate the potential for agricultural irrigation water shortages.

BASIN or REGION	*SWSI Value*	*Most Recent Year With Similar SWSI Value*	*Agricultural Water Supply Shortage May Occur When SWSI is Less Than*
PANHANDLE	-3.2	----	NA
CLEARWATER	-3.2	2001	NA
SALMON	-1.6	2000	NA
WEISER	-1.6	2009	NA
PAYETTE	-1.8	2005	NA
BOISE	-1.3	2002	-1.7
BIG WOOD	-0.5	2009	0.0
LITTLE WOOD	-0.9	2000	-1.9
BIG LOST	-0.9	2008	-0.1
LITTLE LOST	-2.4	2000	0.6
HENRYS FORK	-2.4	2004	-3.3
TETON	-2.8	2003	NA
SNAKE (HEISE)	-2.0	2005	-1.7
OWYHEE	-2.0	2008	-3.4
OAKLEY	-0.9	2009	-0.9
SALMON FALLS	-1.8	2000	-1.3
BRUNEAU	-1.4	2002	NA
BEAR RIVER	-1.6	2006	-2.9

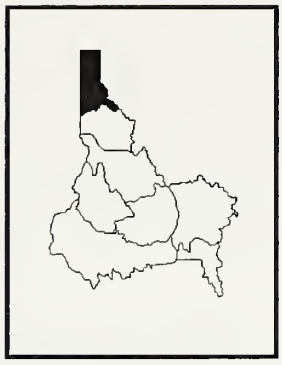
SWSI SCALE, PERCENT CHANCE OF EXCEEDANCE, AND INTERPRETATION

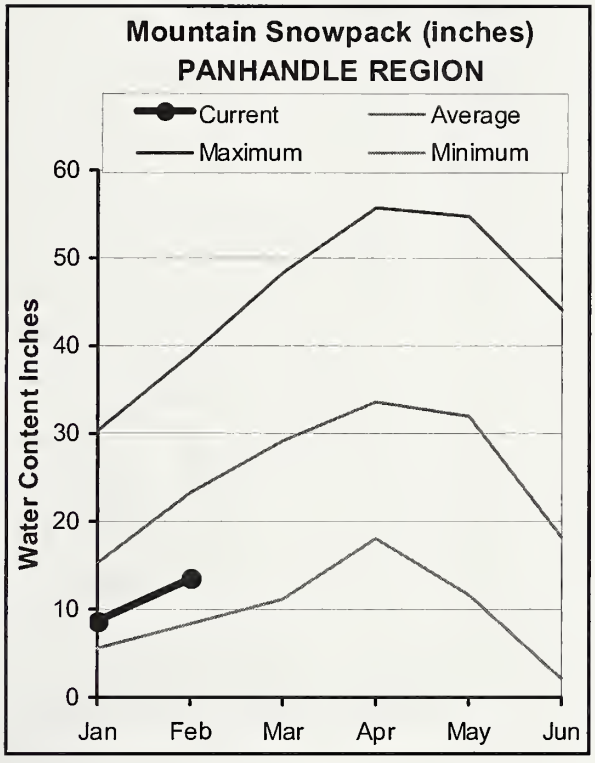


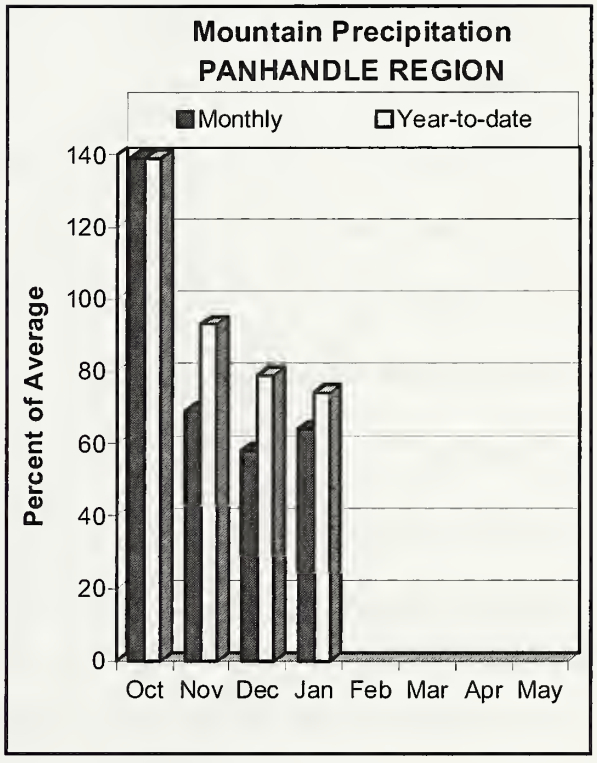
NA = Not Applicable

Note: The Percent Chance of Exceedance is an indicator of how often a range of SWSI values might be expected to occur. Each SWSI unit represents about 12% of the historical occurrences. As an example of interpreting the above scale, the SWSI can be expected to be greater than -3.0, 87% of the time and less than -3.0, 13% of the time. Half the time, the SWSI will be below and half the time above a value of zero. The interval between -1.5 and +1.5 described as "Near Normal Water Supply," represents three SWSI units and would be expected to occur about one-third (36%) of the time.

PANHANDLE REGION
FEBRUARY 1, 2010







WATER SUPPLY OUTLOOK

This winter is a perfect example of model El Nino conditions in the western United States. It is typical during El Nino for the Northwest to be dry while the Southwest gets abundant moisture. The entire Panhandle has below average snow but SNOTEL and snow course sites that are north of I-90 have a better snowpack than the neighboring mountain sites in the Spokane drainage. The Moyie, Kootenai and Priest River drainages have a snowpack of around 75-85% of normal on February 1, while the Coeur d'Alene, St. Joe, Palouse and Spokane sites range from 51-56% of normal. While valley residents may be happy to have a break from the low-land snow in town, the mountains are in need of much more snow. The Panhandle snowpack is the 5th lowest for February 1 since 1981; however this year is still greater than 2001 and 2005 which are the first and second lowest respectively. This current snowpack deficit is leading to less than optimal streamflow forecasts through the summer. The lowest forecast can be found on the Spokane River, which ranges from 44-49% of average. The St. Joe and Coeur d'Alene Rivers are forecast near 53% of average volumes for April-July; 73% for the Kootenai, Priest and Smith Creek; 63% for the Moyie and near 80% of average for the Clark Fork and Boundary Creek. Any snow and spring precipitation will help these basins, so do your snow and rain dances now!

PANHANDLE REGION
Streamflow Forecasts - February 1, 2010

Forecast Point	Forecast Period	<<= Drier = Future Conditions = Wetter =>> Chance Of Exceeding * 90% (1000AF)	70% (1000AF)	50% (Most Probable) (1000AF)	(% AVG.)	30% (1000AF)	10% (1000AF)	30-Yr Avg. (1000AF)
KOOTENAI at Leonia (1,2)	APR-JUL	4056	4815	5160	73	5505	6264	7040
	APR-SEP	4808	5600	5960	73	6320	7112	8120
MOYIE RIVER at Eastport	APR-JUL	169	220	255	63	290	341	405
	APR-SEP	176	229	265	63	301	354	420
SMITH CREEK	APR-JUL	59	77	90	73	103	121	123
	APR-SEP	57	78	92	71	106	127	129
BOUNDARY CREEK	APR-JUL	69	83	93	76	103	117	123
	APR-SEP	72	87	97	75	107	122	129
CLARK FK at Whitehorse Rpds (1,2)	APR-JUL	7840	8820	9270	82	9720	10700	11300
	APR-SEP	8650	9710	10200	82	10700	11800	12500
PEND OREILLE Lake Inflow (2)	APR-JUL	8580	9540	10200	80	10900	11800	12700
	APR-SEP	9450	10400	11100	80	11800	12800	13900
PRIEST near Priest River (1,2)	APR-JUL	345	515	595	73	675	845	815
	APR-SEP	370	550	630	72	710	890	870
NF COEUR D'ALENE RIVER at Enaville	APR-JUL	174	305	390	53	475	605	740
	APR-SEP	198	325	415	53	505	630	780
ST. JOE at Calder	APR-JUL	400	530	615	54	700	830	1140
	APR-SEP	430	560	650	54	740	870	1200
SPOKANE near Post Falls (2)	APR-JUL	515	880	1130	44	1380	1750	2550
	APR-SEP	555	920	1170	44	1420	1790	2650
SPOKANE at Long Lake (2)	APR-JUL	635	1040	1320	46	1600	2000	2850
	APR-SEP	795	1210	1490	49	1770	2180	3070

PANHANDLE REGION
Reservoir Storage (1000 AF) - End of January

Reservoir	Usable Capacity	*** Usable Storage *** This Year	Last Year	Avg
HUNGRY HORSE		NO REPORT		
FLATHEAD LAKE		NO REPORT		
NOXON RAPIDS		NO REPORT		
PEND OREILLE	1561.3	475.1	567.3	749.3
COEUR D'ALENE	238.5	54.9	95.5	115.6
PRIEST LAKE	119.3	55.0	48.5	55.5

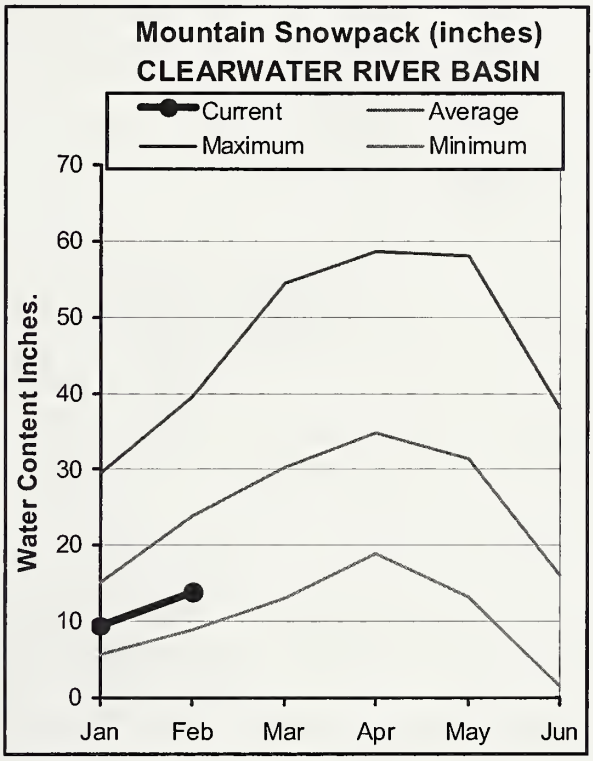
PANHANDLE REGION
Watershed Snowpack Analysis - February 1, 2010

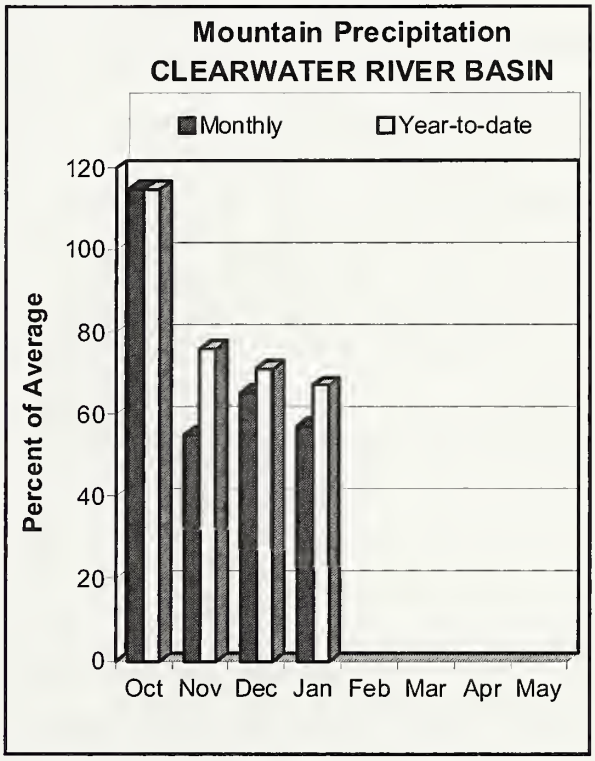
Watershed	Number of Data Sites	This Year as % of Last Yr	Average
Kootenai ab Bonners Ferry	20	102	78
Moyie River	9	115	84
Priest River	4	84	74
Pend Oreille River	69	81	72
Rathdrum Creek	3	56	69
Hayden Lake	0	0	0
Coeur d'Alene River	6	68	52
St. Joe River	4	65	54
Spokane River	13	64	56
Palouse River	1	46	51

* 90%, 70%, 30%, and 10% chances of exceeding are the probabilities that the actual flow will exceed the volumes in the table.

(1) - The values listed under the 10% and 90% Chance of Exceeding are actually 5% and 95% exceedance levels.
(2) - The value is natural flow - actual flow may be affected by upstream water management.

CLEARWATER RIVER BASIN
FEBRUARY 1, 2010





WATER SUPPLY OUTLOOK

If you have ever seen the El Nino skit on Saturday Night Live starring Chris Farley, you understand El Nino has the reputation of dominating the weather. This year is no exception as El Nino has brought major storms to California and Arizona, but left the northwestern U.S. high and dry. The snow storms that did move through left the Clearwater Basin at 60% of normal for the first of February. Cool Creek SNOTEL located in the north fork of the Clearwater drainage at an elevation of 6280 feet, has 18.3 inches of snow water content (63 inches of snow depth) on February 1, but the average is 33.8 inches. To reach this snow water average, this site would need about 55 inches of settled snow depth added to today's snowpack; or about 4.5 more feet of snow. Since newly fallen snow is much lighter than the settled snow depth that the NRCS measures, nearly 100 inches of snow would have to fall from the sky. These calculations are not including the 7.7 inches of snow water that usually accumulates during the month of February, which equates to a few more additional feet of settled snow! To conclude, this SNOTEL site would need to receive 300% of normal snow to climb back to average by the end of February. Overall, the Clearwater Mountains need to receive 184% of average snow between now and April to reach the normal peak snow water amount. Some good news is that the clear and calm weather allowed the NRCS to conduct the annual snow survey measurement flight in the Clearwater to confirm that the data are correct for the water users and Dworshak Reservoir operators. Dworshak is 62% full and 100% of average as of the end of January. The carryover storage from last year will help supplement the lower streamflow volumes that are forecast for the summertime. The Selway and Lochsa are projected to have streamflow volumes near 67% of their normal from April through July; while Dworshak Reservoir inflow is forecast at 56% and the Clearwater at Spalding at 63%. Peak streamflows for recreation will depend on the spring time weather, which is uncertain at this time.

CLEARWATER RIVER BASIN
Streamflow Forecasts - February 1, 2010

Forecast Point	Forecast Period	<<= Drier = Future Conditions = Wetter =>> Chance Of Exceeding * 90% (1000AF)	70% (1000AF)	50% (Most Probable) (1000AF)	(% AVG.)	30% (1000AF)	10% (1000AF)	30-Yr Avg. (1000AF)
Selway R nr Lowell	APR-JUL	1034	1258	1410	68	1562	1786	2060
	APR-SEP	1095	1324	1480	68	1636	1865	2170
Lochsa R nr Lowell	APR-JUL	747	915	1030	67	1145	1313	1530
	APR-SEP	793	964	1080	67	1196	1367	1610
DWORSHAK Resv. Inflow (1,2)	APR-JUL	717	1228	1460	55	1692	2203	2640
	APR-SEP	817	1335	1570	56	1805	2323	2800
CLEARWATER R at Orofino (1)	APR-JUL	1967	2787	3160	68	3533	4353	4650
	APR-SEP	2073	2937	3330	68	3723	4587	4900
CLEARWATER R at Spalding (1,2)	APR-JUL	2764	4075	4670	63	5265	6576	7430
	APR-SEP	2946	4331	4960	63	5589	6974	7850

CLEARWATER RIVER BASIN
Reservoir Storage (1000 AF) - End of January

Reservoir	Usable Capacity	*** Usable Storage *** This Year	Last Year	Avg
DWORSHAK	3468.0	2167.4	2343.1	2170.7

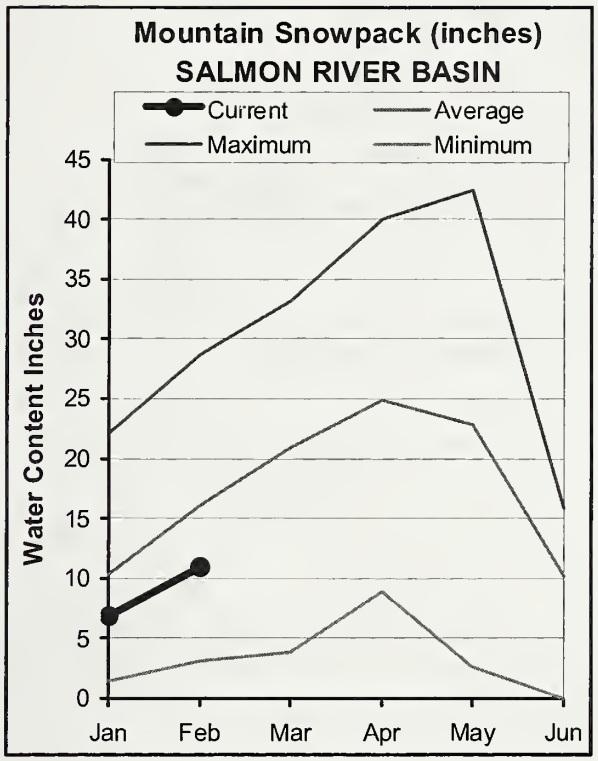
CLEARWATER RIVER BASIN
Watershed Snowpack Analysis - February 1, 2010

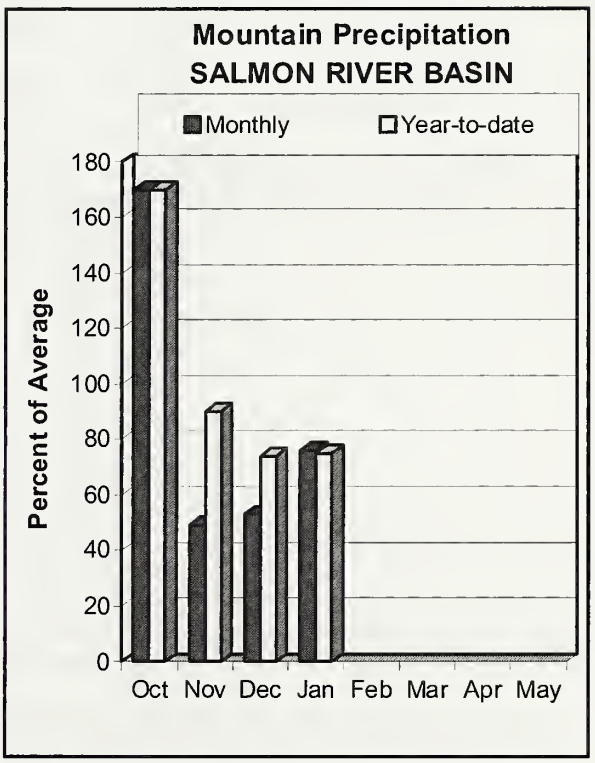
Watershed	Number of Data Sites	This Year as % of Last Yr	Average
North Fork Clearwater	9	66	58
Lochsa River	4	70	63
Selway River	5	61	62
Clearwater Basin Total	17	64	59

* 90%, 70%, 30%, and 10% chances of exceeding are the probabilities that the actual flow will exceed the volumes in the table.

(1) - The values listed under the 10% and 90% Chance of Exceeding are actually 5% and 95% exceedance levels.
(2) - The value is natural flow - actual flow may be affected by upstream water management.

SALMON RIVER BASIN
FEBRUARY 1, 2010





WATER SUPPLY OUTLOOK

The River of no Return quite possibly has a snowpack of no return as this February 1 is only 69% of normal overall. The SNOTEL sites in the basin would have to experience 150% of normal snow between now and April to reach the average seasonal peak, which usually occurs near the first of April. The Lemhi snowpack has the best snow at 83% of normal, while the middle and south fork of the Salmon are 61-64%. Hopefully, spring will surprise us as it did last year when March brought 156% of normal precipitation following a below average January and February. The Salmon River and its tributaries are forecast to flow between 65-70% of their normal summertime volumes, which may influence the type of crop to grow. Recreationists will still have a good season, but the timing and magnitude of peak snowmelt driven flows may not be like the last two years.

SALMON RIVER BASIN
Streamflow Forecasts - February 1, 2010

Forecast Point	Forecast Period	<<= Drier = Future Conditions = Wetter =>> Chance Of Exceeding * 90% (1000AF)	70% (1000AF)	50% (Most Probable) (1000AF)	(% AVG.)	30% (1000AF)	10% (1000AF)	30-Yr Avg. (1000AF)
SALMON at Salmon (1)	APR-JUL	206	439	545	64	651	884	855
	APR-SEP	243	516	640	64	764	1037	1000
Lemhi R nr Lemhi	APR-JUL	29	44	56	65	70	93	86
	APR-SEP	38	56	70	67	86	112	105
MF Salmon at MF Lodge	APR-JUL	236	396	505	64	614	774	785
	APR-SEP	275	454	575	66	696	875	875
Salmon at White Bird (1)	APR-JUL	2070	3432	4050	69	4668	6030	5850
	APR-SEP	2330	3836	4520	70	5204	6710	6480

SALMON RIVER BASIN
Reservoir Storage (1000 AF) - End of January

Reservoir	Usable Capacity	*** Usable Storage *** This Year	Last Year	Avg

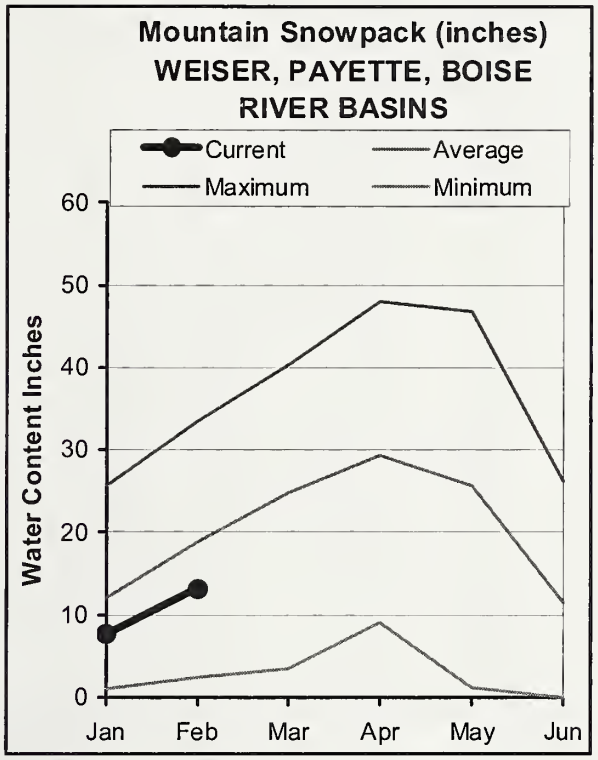
SALMON RIVER BASIN
Watershed Snowpack Analysis - February 1, 2010

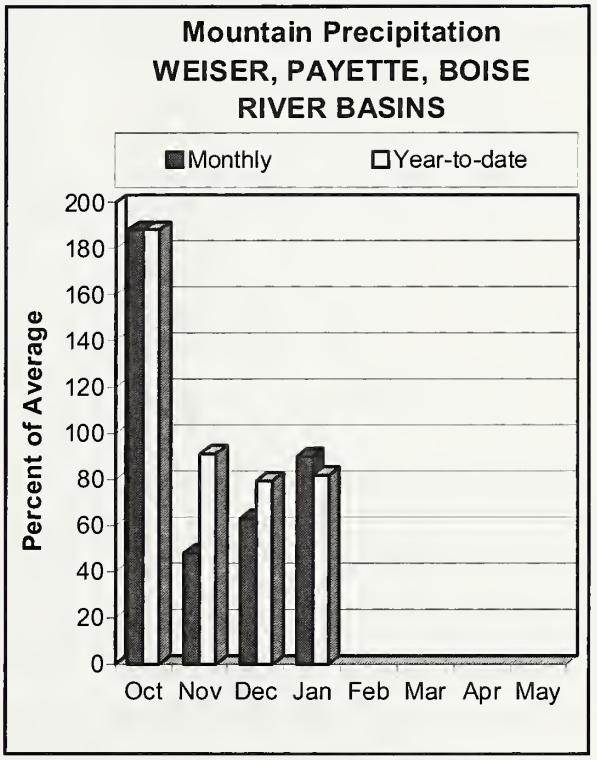
Watershed	Number of Data Sites	This Year as % of Last Yr	Average
Salmon River ab Salmon	8	76	66
Lemhi River	6	81	83
Middle Fork Salmon River	3	76	61
South Fork Salmon River	3	83	64
Little Salmon River	4	88	72
Salmon Basin Total	24	77	69

* 90%, 70%, 30%, and 10% chances of exceeding are the probabilities that the actual flow will exceed the volumes in the table.

(1) - The values listed under the 10% and 90% Chance of Exceeding are actually 5% and 95% exceedance levels.
(2) - The value is natural flow - actual flow may be affected by upstream water management.

WEISER, PAYETTE, BOISE RIVER BASINS FEBRUARY 1, 2010





WATER SUPPLY OUTLOOK

Near average precipitation returned to the Weiser and Boise basins in January, while drier than normal conditions persisted in the Payette basin for a third straight month. Snowpack percentages have improved since January 1st in all three basins and currently stand at about 83% of average in the Weiser and Boise and 73% in the Payette. These conditions rank 10th lowest since 1960 for the Payette basin and 15th lowest in the Boise. In the Weiser basin records go back to 1982 and this winter ranks 12th lowest. The chance of recovering from the dry start to this winter is rapidly fading; in fact since records began there has never been a winter when the April 1st snowpack exceeded the average amount when the February 1st amounts were similar to the amounts we are currently measuring. All is not lost however; back in October we predicted that an 80% of normal snowpack in the Boise basin would be adequate to meet surface water irrigation needs. As long as we continue to receive average precipitation during the last two months of winter we are on track to hit this critical target. Good carryover reservoir storage from last year is the reason water users will be able to make it through the irrigation season despite the lower than normal snow. The Boise River reservoirs including Anderson Ranch, Arrowrock and Lucky Peak are 58% of capacity, about average for this time of year. Deadwood and Cascade Reservoirs on the Payette are 62% of capacity, also an average amount. Of particular interest, Anderson Ranch and Deadwood reservoirs, which are typically the hardest to fill, are holding more than average. The Boise River near Boise and the Payette River near Horseshoe Bend are both forecast at about 70% of average while the Weiser is forecast at 72%. If conditions in February and March turn drier than normal water users should prepare for the possibility of shortages. This is especially true for the Weiser basin which lacks a major reservoir.

WEISER, PAYETTE, BOISE RIVER BASINS
Streamflow Forecasts - February 1, 2010

Forecast Point	Forecast Period	<<= Drier = Future Conditions = Wetter =>> Chance Of Exceeding * 90% (1000AF)	70% (1000AF)	50% (Most Probable) (1000AF)	(% AVG.)	30% (1000AF)	10% (1000AF)	30-Yr Avg. (1000AF)
Weiser R nr Weiser (1)	FEB-JUL	195	380	480	74	595	890	650
	APR-JUL	110	220	280	72	350	525	390
	APR-SEP	123	235	300	71	370	555	420
SF Payette R at Lowman	APR-JUL	230	282	320	73	360	424	440
	APR-SEP	260	318	360	73	405	476	495
Deadwood Resv Inflow (1,2)	APR-JUL	52	80	93	69	106	134	134
	APR-SEP	55	86	100	70	114	145	142
Lake Fork Payette R nr McCall	APR-JUL	49	58	64	75	71	81	85
	APR-SEP	50	59	66	74	73	84	89
NF Payette R at Cascade (1,2)	APR-JUL	182	304	360	69	416	538	520
	APR-SEP	177	306	365	68	424	553	540
NF Payette R nr Banks (2)	APR-JUL	280	381	450	67	519	620	675
	APR-SEP	269	380	455	65	530	641	700
Payette R nr Horseshoe Bend (1,2)	APR-JUL	663	984	1130	69	1276	1597	1640
	APR-SEP	648	1035	1210	69	1385	1772	1760
Boise R nr Twin Springs (1)	APR-JUL	273	415	480	76	545	687	635
	APR-SEP	298	451	520	75	589	742	690
SF BOISE at Anderson Ranch Dam (1,2)	APR-JUL	161	301	365	68	429	569	540
	APR-SEP	177	323	390	67	457	603	580
MORES CK nr Arrowrock Dam	APR-JUL	41	63	80	61	99	132	131
	APR-SEP	43	65	83	61	103	137	137
Boise R nr Boise (1,2)	APR-JUN	542	781	890	71	999	1238	1260
	APR-JUL	486	826	980	70	1134	1474	1410
	APR-SEP	534	903	1070	70	1237	1606	1530

WEISER, PAYETTE, BOISE RIVER BASINS
Reservoir Storage (1000 AF) - End of January

Reservoir	Usable Capacity	*** Usable Storage *** This Year	Last Year	Avg
MANN CREEK	11.1	1.5	2.8	4.3
CASCADE	693.2	437.9	464.2	448.4
DEADWOOD	161.9	93.7	81.0	86.3
ANDERSON RANCH	450.2	303.4	262.3	283.6
ARROWROCK	272.2	201.2	224.7	201.1
LUCKY PEAK	293.2	81.4	89.0	106.6
LAKE LOWELL (DEER FLAT)	165.2	114.4	89.5	101.7

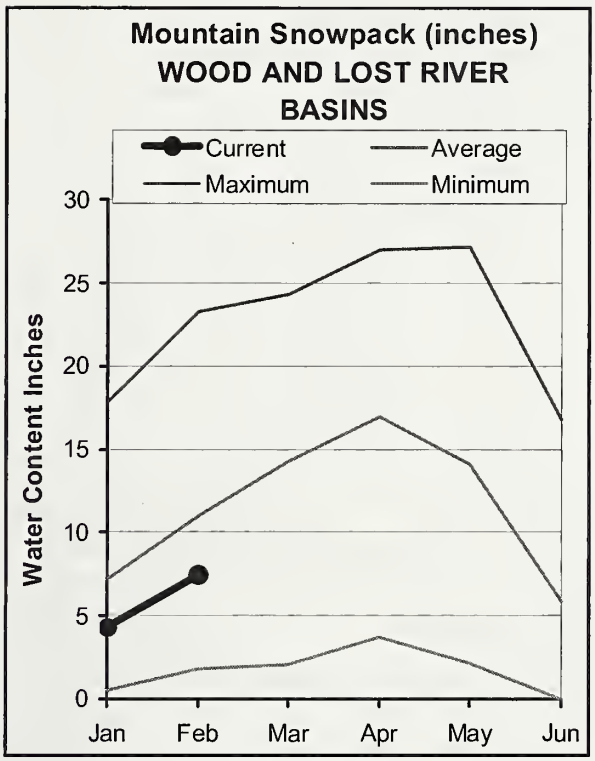
WEISER, PAYETTE, BOISE RIVER BASINS
Watershed Snowpack Analysis - February 1, 2010

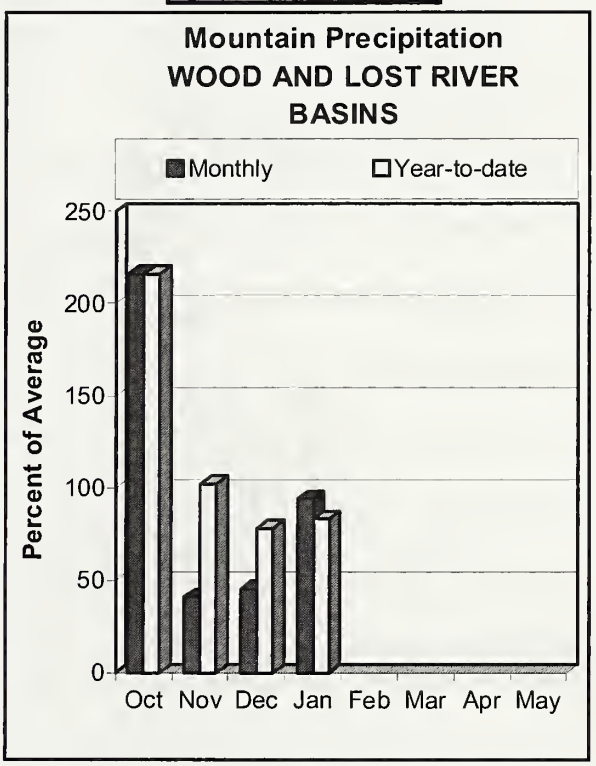
Watershed	Number of Data Sites	This Year as % of Last Yr	Average
Mann Creek	1	160	110
Weiser River	3	134	83
North Fork Payette	8	93	73
South Fork Payette	5	88	70
Payette Basin Total	14	92	73
Middle & North Fork Boise	5	92	74
South Fork Boise River	9	94	81
Mores Creek	5	104	90
Boise Basin Total	16	97	82
Canyon Creek	2	130	134

* 90%, 70%, 30%, and 10% chances of exceeding are the probabilities that the actual flow will exceed the volumes in the table.

(1) - The values listed under the 10% and 90% Chance of Exceeding are actually 5% and 95% exceedance levels.
(2) - The value is natural flow - actual flow may be affected by upstream water management.

WOOD and LOST RIVER BASINS
FEBRUARY 1, 2010





WATER SUPPLY OUTLOOK

A slow start to the snow year has really hurt these basins and the snow is similar to 2001 and 2007. Mid to late January's storms made a valiant effort at recovery bringing 94% of average precipitation for the month; the best in the entire state! If only December and early January had brought some winter weather, the snow would be better than 66-92% of normal on February 1. The best snowpack with respect to average is in Camas Creek at 92% and the lowest snow is in the Big Lost and Little Lost drainages, both at 66%. In order to reach the average snow peak near the first of April, these storms would have to continue to the tune of 150% of average for the region. If this doesn't happen, the streams are only going to experience a range of 50-67% spring and summer volumes. The lowest forecast is for the Camas Creek at 50% of average, next is the Little Wood near Carey at 55% of average. The Big Wood above and below Magic Reservoir are 56-57% of average for April-July. The Big Lost and Little Lost Rivers range from 60-65% of average. The best forecast is for the Big Wood River at Hailey total flow, which calls for 67% of average flow. The good news is the current reservoir storage is 92% of average for Magic and 130% for Mackay. However, the mountains need lots more snow or abundant spring precipitation to help offset any water shortages, which may occur at this rate. Water users may want to lean towards the lower forecast if they do not want to take any risks this year.

WOOD AND LOST RIVER BASINS
Streamflow Forecasts - February 1, 2010

Forecast Point	Forecast Period	<<= Drier = Future Conditions = Wetter =>> Chance Of Exceeding * 90% (1000AF)	70% (1000AF)	50% (Most Probable) (1000AF)	(% AVG.)	30% (1000AF)	10% (1000AF)	30-Yr Avg. (1000AF)
Big Wood R at Hailey (1)	APR-JUL	27	125	170	67	215	313	255
	APR-SEP	29	140	190	66	240	351	290
Big Wood R ab Magic Reservoir	APR-JUL	8.0	68	108	57	148	208	190
	APR-SEP	9.0	73	116	57	159	223	205
Camas Ck nr Blaine	APR-JUL	13.0	32	50	50	72	112	100
	APR-SEP	13.0	33	51	51	73	114	101
BIG WOOD below Magic Dam (2)	APR-JUL	5.0	98	162	56	226	319	290
	APR-SEP	9.0	105	170	56	235	331	305
LITTLE WOOD R abv High Five Ck	MAR-JUL	15.8	34	50	59	69	103	85
	MAR-SEP	17.3	37	54	59	75	111	92
LITTLE WOOD near Carey (2)	MAR-JUL	18.9	39	53	55	67	87	96
	MAR-SEP	19.0	41	56	54	71	93	104
BIG LOST at Howell Ranch	APR-JUL	54	87	113	65	143	193	173
	APR-SEP	61	98	128	65	162	220	197
BIG LOST blw Mackay Resv	APR-JUL	22	60	85	60	110	148	141
	APR-SEP	26	72	103	60	134	180	172
Little Lost R nr Howe	APR-JUL	11.5	16.3	20	65	24	31	31
	APR-SEP	14.2	20	25	64	30	39	39

WOOD AND LOST RIVER BASINS
Reservoir Storage (1000 AF) - End of January

Reservoir	Usable Capacity	*** Usable Storage *** This Year	Last Year	Avg
MAGIC	191.5	78.4	27.5	85.0
LITTLE WOOD	30.0	21.7	10.8	16.3
MACKAY	44.4	36.1	23.1	27.7

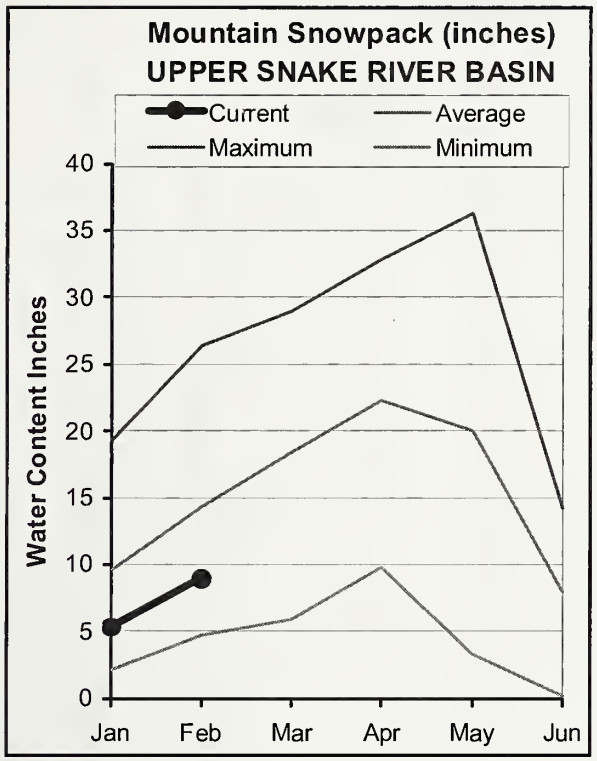
WOOD AND LOST RIVER BASINS
Watershed Snowpack Analysis - February 1, 2010

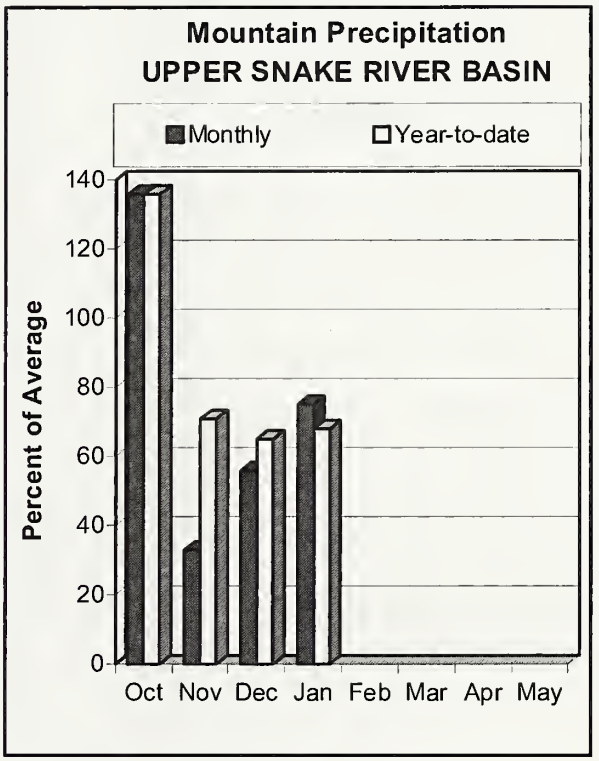
Watershed	Number of Data Sites	This Year as % of Last Yr	Average
Big Wood ab Hailey	8	90	68
Camas Creek	5	97	92
Big Wood Basin Total	13	92	75
Fish Creek	3	98	85
Little Wood River	8	85	76
Big Lost River	6	80	66
Little Lost River	3	79	66
Birch-Medicine Lodge Cree	2	86	81
Camas-Beaver Creeks	4	85	73

* 90%, 70%, 30%, and 10% chances of exceeding are the probabilities that the actual flow will exceed the volumes in the table.

(1) - The values listed under the 10% and 90% Chance of Exceeding are actually 5% and 95% exceedance levels.
(2) - The value is natural flow - actual flow may be affected by upstream water management.

UPPER SNAKE BASINS
FEBRUARY 1, 2010





WATER SUPPLY OUTLOOK

The Upper Snake basin is experiencing one of its leanest winters since records began. Snowpacks range from 50% of average in the Hoback basin to 67% for Willow Creek. Taken as a whole the Snake River above American Falls is currently recording 63% of its normal snowpack. An index combining 28 snow measuring sites in the basin above American Falls shows that this is the 6th lowest snowpack in 50 years. The record at Lewis Lake Divide extends back to 1919 and this year ranks as 10th lowest with only 2001 being lower during the last decade of drought prone years. Precipitation for the entire basin above American Falls was 75% of normal in January and is 68% of average precipitation since October 1st. January precipitation at Lewis Lake was the 4th lowest since 1964. Streamflow forecasts range from 50-70% of average in this region. The good news is the reservoir storage which is above average and there is actually 500,000 acre-feet more water in Palisades Reservoir and Jackson Lake than in 2001 when there was a very similar snowpack. Combined storage in Palisades and Jackson is 1,750,000 acre-feet, while capacity is 2,247,000 acre-feet. The Snake River near Heise streamflow forecast is 2,420,000 acre-feet for the April-September period. Summing the current storage and projected runoff to produce a surface water supply index illustrates that 4,170,000 acre-feet may be available while the threshold for shortages is 4,500,000 acre-feet. If conditions the next two months turn even drier, then water users should prepare for the possibility of shortages. Current supplies are marginally adequate which means reservoirs will be drafted earlier than normal with the limited inflows this summer.

UPPER SNAKE RIVER BASIN
Streamflow Forecasts - February 1, 2010

Forecast Point	Forecast Period	<<= Drier = Future Conditions = Wetter =>> Chance Of Exceeding * 90% (1000AF)	70% (1000AF)	50% (Most Probable) (1000AF)	50% (Most Probable) (% AVG.)	30% (1000AF)	10% (1000AF)	30-Yr Avg. (1000AF)
HENRYS FORK nr Ashton (2)	APR-JUL	288	352	400	70	451	531	570
	APR-SEP	413	492	550	72	611	706	765
HENRYS FORK near Rexburg (2)	APR-JUL	772	938	1050	67	1162	1328	1560
	APR-SEP	1046	1233	1360	68	1487	1674	2010
Falls R nr Ashton (2)	APR-JUL	207	244	270	71	298	341	380
	APR-SEP	247	289	320	71	352	402	450
Teton R nr Driggs	APR-JUL	60	79	94	57	110	135	165
	APR-SEP	76	101	120	57	141	174	210
Teton R nr St. Anthony	APR-JUL	155	201	235	58	272	332	405
	APR-SEP	190	244	285	59	329	399	480
Snake River At Flagg Ranch	APR-JUL	248	306	345	70	384	442	495
	APR-SEP	271	333	375	69	417	479	545
SNAKE nr Moran (1,2)	APR-JUL	330	457	515	63	573	700	815
	APR-SEP	367	510	575	64	640	783	905
Pacific Ck At Moran	APR-JUL	56	81	98	57	115	140	171
	APR-SEP	58	84	102	57	120	146	178
Buffalo Fork ab Lava nr Moran, WY	APR-JUL	137	171	195	65	219	253	301
	APR-SEP	154	193	220	64	247	286	344
Gros Ventre R at Kelly, WY	APR-JUL	48	85	110	55	135	172	200
	APR-JUL	48	85	110	55	135	172	200
SNAKE abv Resv nr Alpine (1,2)	APR-JUL	823	1192	1360	57	1528	1897	2370
	APR-SEP	960	1386	1580	58	1774	2200	2730
Greys R Nr Alpine	APR-JUL	132	184	220	65	256	308	340
	APR-SEP	157	219	260	66	301	363	395
Salt R Nr Etna	APR-JUL	49	133	190	56	247	331	340
	APR-SEP	79	178	245	58	312	411	420
SNAKE nr Irwin (1,2)	APR-JUL	1126	1658	1900	57	2142	2674	3330
	APR-SEP	1379	1978	2250	58	2522	3121	3870
SNAKE near Heise (2)	APR-JUL	1381	1773	2040	57	2307	2699	3560
	APR-SEP	1668	2116	2420	58	2724	3172	4160
WILLOW CREEK nr Ririe (2)	MAR-JUL	22	40	52	59	64	82	88
Blackfoot R ab Res nr Henry	APR-JUN	15.3	29	40	55	53	76	73
Portneuf R at Topaz	MAR-JUL	34	44	52	58	60	74	89
	MAR-SEP	42	54	63	58	73	89	109
Snake River at Neeley (1,2)	APR-JUL	138	1095	1530	47	1965	2922	3240
	APR-SEP	153	1189	1660	47	2131	3167	3510

UPPER SNAKE RIVER BASIN
Reservoir Storage (1000 AF) - End of January

Reservoir	Usable Capacity	*** Usable Storage *** This Year	Last Year	Avg
HENRYS LAKE	90.4	86.0	86.2	83.2
ISLAND PARK	135.2	111.9	110.6	102.2
GRASSY LAKE	15.2	12.7	12.9	11.8
JACKSON LAKE	847.0	629.2	646.0	490.1
PALISADES	1400.0	1118.3	923.4	1040.3
RIRIE	80.5	40.4	40.0	35.8
BLACKFOOT	348.7	197.3	91.2	220.1
AMERICAN FALLS	1672.6	1365.0	1193.8	1125.4

UPPER SNAKE RIVER BASIN
Watershed Snowpack Analysis - February 1, 2010

Watershed	Number of Data Sites	This Year as % of Last Yr	This Year as % of Average
Henrys Fork-Falls River	7	74	62
Teton River	8	74	64
Henrys Fork above Rexburg	15	74	63
Snake above Jackson Lake	5	65	60
Pacific Creek	2	60	66
Gros Ventre River	3	55	59
Hoback River	5	54	50
Greys River	4	60	64
Salt River	5	57	64
Snake above Palisades	21	61	60
Willow Creek	7	65	67
Blackfoot River	4	71	64
Portneuf River	6	79	70
Snake abv American Falls	39	66	63

* 90%, 70%, 30%, and 10% chances of exceeding are the probabilities that the actual flow will exceed the volumes in the table.

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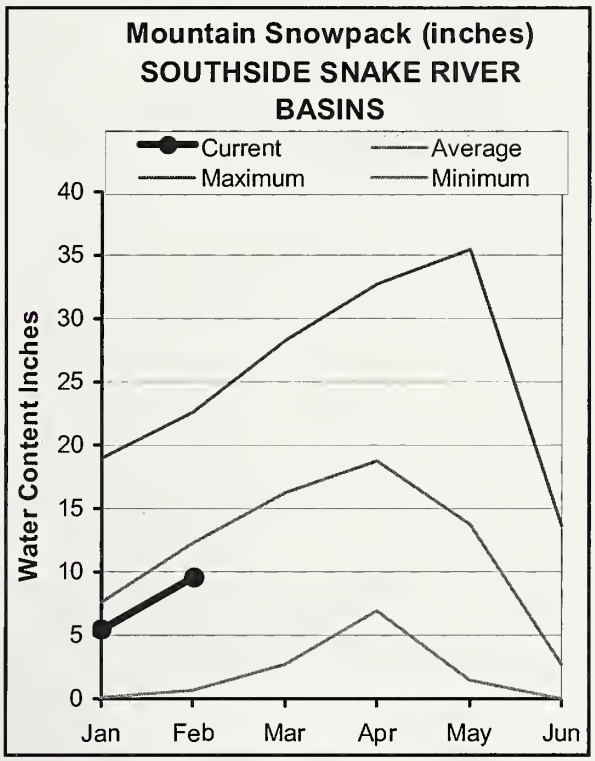
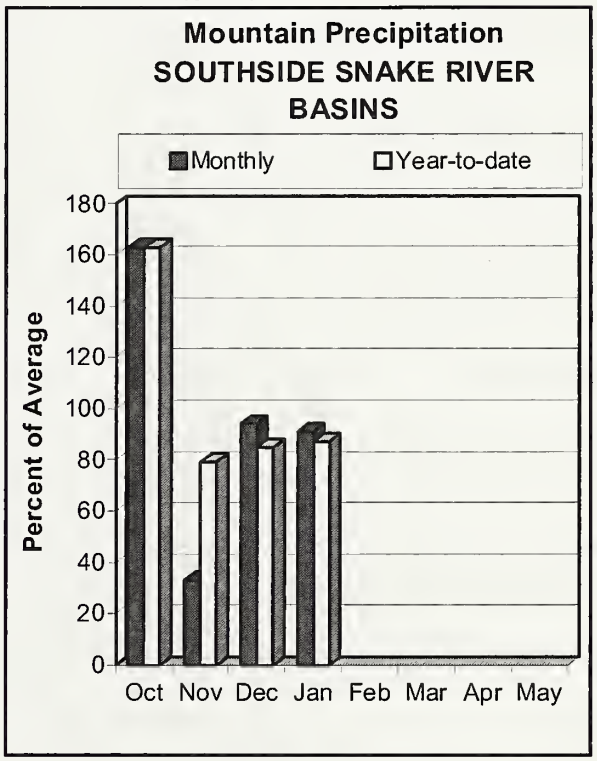
(2) - The value is natural flow - actual flow may be affected by upstream water management.

SOUTHSIDE SNAKE RIVER BASINS FEBRUARY 1, 2010





WATER SUPPLY OUTLOOK

The Owyhee basin is the only drainage in the state where snowpacks are near average. Unfortunately the same does not apply across all of the southside Snake basins. The Owyhee snowpack is 95% of average; Oakley follows at 81% and the Bruneau and Salmon Falls basins trail at about 72% of normal. Snowpacks are better this month than last month as the Southside basins picked up near average precipitation in January due to the El Nino storm track across the southwestern states. Water year-to-date precipitation since October 1st ranges from 82% of normal in the Bruneau basin, to 85% in the Salmon Falls and Oakley basins, to 90% in the Owyhee basin. Oakley, Salmon Falls and Wildhorse reservoirs are storing more water than last year, while Owyhee Reservoir has a little less due to the runoff that was only 60% of average last year. Current snow levels in the Owyhee are slightly less than last year. Snow levels in the Bruneau, Salmon Falls and Oakley basins are similar to 2007 when the runoff was 40-45% of average. Current streamflow forecasts call for 68% of average for Oakley Reservoir inflow, 50% for Salmon Falls Creek, and 59% in the Bruneau River. Based on current the Surface Water Supply Index which combines reservoir storage and projected flow, irrigation water supplies will be tight and similar to 2000 in the Salmon Falls basin. In the Oakley basin, with half the adequate irrigation supply already in the reservoir, streamflow of 68% of average, 25,000 acre-feet is need to provide adequate irrigation supplies. The forecast is for 68% of average, which means water supplies will be marginally adequate especially if future conditions are drier than normal.

SOUTHSIDE SNAKE RIVER BASINS
Streamflow Forecasts - February 1, 2010

Forecast Point	Forecast Period	<<= Drier = Future Conditions = Wetter =>> Chance Of Exceeding * 90% (1000AF)	70% (1000AF)	50% (Most Probable) (1000AF)	(% AVG.)	30% (1000AF)	10% (1000AF)	30-Yr Avg. (1000AF)
Oakley Reservoir Inflow	MAR-JUL	10.6	17.4	23	68	29	40	34
	MAR-SEP	11.6	19.0	25	68	32	44	37
OAKLEY RESV STORAGE	FEBRUARY	30	31	32	102	33	34	31
	MARCH	33	35	37	103	39	41	36
	APRIL	35	39	41	100	43	47	41
Salmon Falls Ck nr San Jacinto	MAR-JUN	21	34	45	51	58	79	89
	MAR-JUL	20	34	46	50	59	82	93
	MAR-SEP	22	37	49	50	63	86	98
SALMON FALLS RESV STORAGE	FEBRUARY	54	57	59	99	61	64	60
	MARCH	55	62	66	94	70	77	70
	APRIL	62	70	75	85	80	88	88
Bruneau R nr Hot Springs	MAR-JUL	66	106	138	59	174	236	235
	MAR-SEP	70	111	145	58	183	247	250
Owyhee R nr Gold Creek (2)	MAR-JUL	9.3	15.0	20	63	26	37	32
	MAR-SEP	10.0	15.9	21	68	27	38	31
Owyhee R nr Rome	FEB-JUL	181	311	420	64	545	758	655
	FEB-SEP	190	324	435	64	562	780	675
Owyhee R blw Owyhee Dam (2)	FEB-JUL	28	180	430	61	680	1050	700
	FEB-SEP	44	205	465	64	725	1100	730
	APR-SEP	9.0	94	245	57	395	620	430
Reynolds Ck at Tollgate	MAR-JUL	4.5	6.4	8.0	83	9.7	12.6	9.7

SOUTHSIDE SNAKE RIVER BASINS
Reservoir Storage (1000 AF) - End of January

Reservoir	Usable Capacity	*** Usable Storage *** This Year	Last Year	Avg
OAKLEY	75.6	23.9	18.4	28.2
SALMON FALLS	182.6	43.9	20.5	55.7
WILDHORSE RESERVOIR	71.5	27.8	25.6	38.9
OWYHEE	715.0	186.0	206.6	438.3
BROWNLEE	1420.0	1248.6	1155.1	1176.3

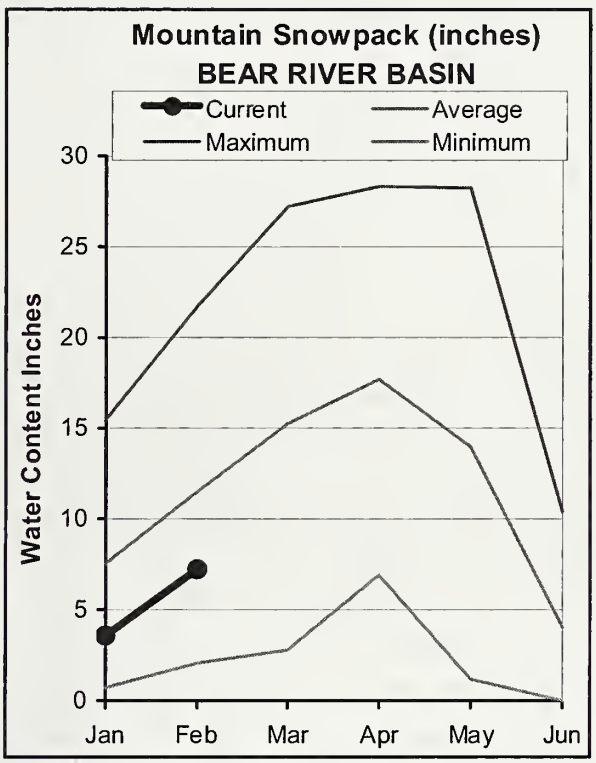
SOUTHSIDE SNAKE RIVER BASINS
Watershed Snowpack Analysis - February 1, 2010

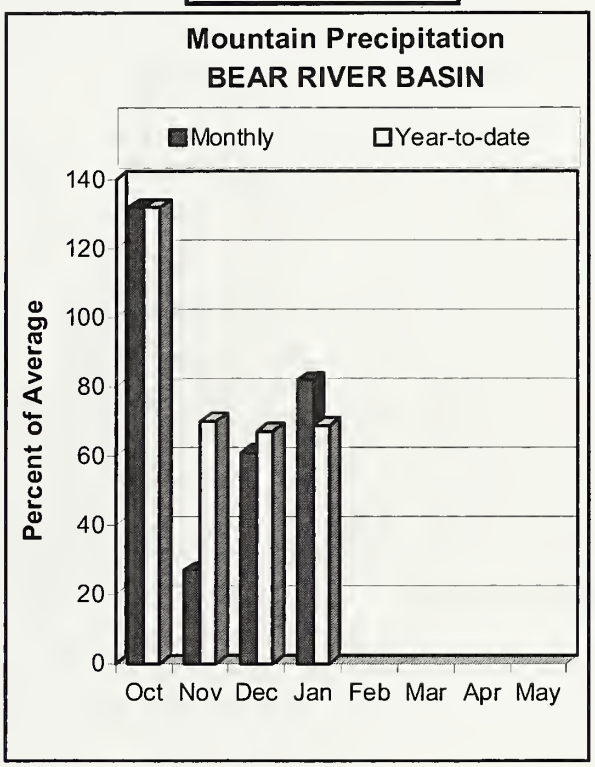
Watershed	Number of Data Sites	This Year as % of Last Yr	Average
Raft River	2	104	87
Goose-Trapper Creeks	3	96	81
Salmon Falls Creek	7	72	74
Bruneau River	8	63	72
Reynolds Creek	0	0	0
Owyhee Basin Total	20	86	95

* 90%, 70%, 30%, and 10% chances of exceeding are the probabilities that the actual flow will exceed the volumes in the table.

(1) - The values listed under the 10% and 90% Chance of Exceeding are actually 5% and 95% exceedance levels.
(2) - The value is natural flow - actual flow may be affected by upstream water management.

BEAR RIVER BASIN
FEBRUARY 1, 2010





WATER SUPPLY OUTLOOK

The Bear River high country received a good snow storm at the end of January, but this wasn't enough to boost monthly precipitation higher than 82% of average. The February 1 snowpack continues to lag at 61% of average. Snow indexes, which are a summation of snow water content from sites in the basin that are then ranked and compared to other years, show that this February is similar to 2007. The streamflow forecasts are also similar to 2007. In 2007, the observed April-July flow at the Bear River below Stewart Dam was 38 KAF, 16% of normal. That year, the 90% exceedance forecast called for 27 KAF and the 50% exceedance called for 125 KAF. This year, the Bear River at Stewart Dam's 50% exceedance forecast calls for 115 KAF and 49% of average, which is the lowest forecast in the basin. The Little Bear at Paradise, Big Creek and Blacksmith Fork have a slightly better forecast of 52-55% of normal; Smiths Fork near the Border is forecast for 63% and the Bear River above the reservoir and near the Utah-Wyoming line has a forecast ranging from 70-75% of normal. Bear Lake was 38% full and 60% of average at the end of January. Based on our Surface Water Supply Index (SWSI), which combines current reservoir storage and forecasted streamflow volumes, the Bear River water users will have adequate water supplies throughout the summer. If the summer is hot and dry then Bear Lake will see another season of outflows exceeding inflows; a disappointing although common pattern during the last decade.

BEAR RIVER BASIN
Streamflow Forecasts - February 1, 2010

Forecast Point	Forecast Period	<<== Drier == Future Conditions == Wetter ==>> Chance Of Exceeding * 90% (1000AF)	70% (1000AF)	50% (Most Probable) (1000AF)	(% AVG.)	30% (1000AF)	10% (1000AF)	30-Yr Avg. (1000AF)
Bear River nr UT-WY State Line	APR-JUL	45	69	85	75	101	125	113
	APR-SEP	45	72	90	72	108	135	125
Bear River ab Reservoir nr Woodruff	APR-JUL	5.0	57	95	70	133	189	136
	APR-SEP	7.0	50	98	69	146	220	142
Big Creek nr Randolph	APR-JUL	0.8	1.9	2.7	55	3.5	4.6	4.9
Smiths Fork nr Border	APR-JUL	35	53	65	63	77	95	103
	APR-SEP	40	60	74	61	88	108	121
Bear River at Stewart Dam	APR-JUL	12.0	45	115	49	185	290	234
	APR-SEP	16.0	48	128	49	210	325	262
Little Bear at Paradise, UT	APR-JUL	2.8	13.8	24	52	34	49	46
Logan R nr Logan, UT	APR-JUL	25	55	75	60	95	125	126
Blacksmith Fk Abv Up&L Dam Nr Hyrum	APR-JUL	1.7	16.2	26	54	36	50	48

BEAR RIVER BASIN
Reservoir Storage (1000 AF) - End of January

Reservoir	Usable Capacity	*** Usable Storage *** This Year	Last Year	Avg
BEAR LAKE	1421.0	539.3	374.0	906.1
MONTPELIER CREEK	4.0	2.5	2.5	1.7

BEAR RIVER BASIN
Watershed Snowpack Analysis - February 1, 2010

Watershed	Number of Data Sites	This Year as % of Last Yr	Average
Smiths & Thomas Forks	4	66	63
Bear River ab WY-ID line	10	66	61
Montpelier Creek	2	78	64
Mink Creek	1	69	57
Cub River	1	68	66
Bear River ab ID-UT line	18	69	62
Malad River	1	93	85

* 90%, 70%, 30%, and 10% chances of exceeding are the probabilities that the actual flow will exceed the volumes in the table.

(1) - The values listed under the 10% and 90% Chance of Exceeding are actually 5% and 95% exceedance levels.
(2) - The value is natural flow - actual flow may be affected by upstream water management.

Streamflow Adjustment List for All Forecasts Published in Idaho Water Supply Outlook Report: streamflow forecasts are projections of runoff volumes that would occur without influences from upstream reservoirs or diversions. These values are referred to as natural, unregulated or adjusted flows. To make these adjustments, changes in reservoir storage, diversions, and inter-basin transfers are added or subtracted from the observed (actual) streamflow volumes. The following list documents the adjustments made for each forecast point. **(Revised Nov. 2007).**

Panhandle River Basins

Kootenai R at Leonia, ID
+ Lake Koocanusa (Storage Change)

Boundary Ck nr Porthill, ID – No Corrections

Moyie R at Eastport, ID – No Corrections

Smith Creek nr Porthill, ID – No Corrections

Clark Fork R at Whitehorse Rapids, ID
+ Hungry Horse (Storage Change)
+ Flathead Lake (Storage Change)
+ Noxon Rapids Resv (Storage Change)

Pend Oreille Lake Inflow, ID
+ Pend Oreille R at Newport, WA
+ Hungry Horse (Storage Change)
+ Flathead Lake (Storage Change)
+ Noxon Rapids (Storage Change
+ Pend Oreille Lake (Storage Change)
+ Priest Lake (Storage Change)

Priest R nr Priest R, ID
+ Priest Lake (Storage Change)

NF Coeur d'Alene R at Enaville, ID - No Corrections

St. Joe R at Calder, ID - No Corrections

Spokane R nr Post Falls, ID
+ Coeur d'Alene Lake (Storage Change)

Spokane R at Long Lake, WA
+ Coeur d'Alene Lake (Storage Change)
+ Long Lake, WA (Storage Change)

Clearwater River Basin

Selway R nr Lowell - No Corrections

Lochsa R nr Lowell - No Corrections

Dworshak Resv Inflow, ID
+ Clearwater R nr Peck, ID
- Clearwater R at Orofino, ID
+ Dworshak Resv (Storage Change)

Clearwater R at Orofino, ID - No Corrections

Clearwater R at Spalding, ID
+ Dworshak Resv (Storage Change)

Salmon River Basin

Salmon R at Salmon, ID - No Corrections

Lemhi R nr Lemhi, ID – No Corrections

MF Salmon R at MF Lodge, ID – No Corrections

Salmon R at White Bird, ID - No Corrections

Weiser, Payette, Boise River Basins

Weiser R nr Weiser, ID - No Corrections

SF Payette R at Lowman, ID - No Corrections

Deadwood Resv Inflow, ID
+ Deadwood R blw Deadwood Resv nr Lowman
+ Deadwood Resv (Storage Change)

Lake Fork Payette R nr Mccall, ID – No Corrections

NF Payette R at Cascade, ID
+ Cascade Resv (Storage Change)
+ Payette Lake (Storage Change)

NF Payette R nr Banks, ID
+ Cascade Resv (Storage Change)
+ Payette Lake (Storage Change)

Payette R nr Horseshoe Bend, ID
+ Cascade Resv (Storage Change)
+ Deadwood Resv (Storage Change)
+ Payette Lake (Storage Change)

Boise R nr Twin Springs, ID - No Corrections

SF Boise R at Anderson Ranch Dam, ID
+ Anderson Ranch Resv (Storage Change)

Boise R nr Boise, ID
+ Anderson Ranch Resv (Storage Change)
+ Arrowrock Resv (Storage Change)
+ Lucky Peak Resv (Storage Change)

Wood and Lost River Basins

Big Wood R at Hailey, ID - No Corrections

Big Wood R abv Magic Resv, ID
+ Big Wood R nr Bellevue, ID
+ Willow Ck

Camas Ck nr Blaine – No Corrections

Big Wood R blw Magic Dam nr Richfield, ID
+ Magic Resv (Storage Change)

Little Wood R abv High Five Ck, ID – No Corrections

Little Wood R nr Carey, ID
+ Little Wood Resv (Storage Change)

Big Lost R at Howell Ranch, ID - No Corrections

Big Lost R blw Mackay Resv nr Mackay, ID
+ Mackay Resv (Storage Change)

Little Lost R blw Wet Ck nr Howe, ID - No Corrections

Upper Snake River Basin

Henrys Fork nr Ashton, ID
+ Henrys Lake (Storage Change)
+ Island Park Resv (Storage Change)

Henrys Fork nr Rexburg, ID
+ Henrys Lake (Storage Change)
+ Island Park Resv (Storage Change)
+ Grassy Lake (Storage Change)
+ Diversions from Henrys Fk btw Ashton to St. Anthony, ID
+ Diversions from Henrys Fk btw St. Anthony to Rexburg, ID
+ Diversions from Falls R abv nr Ashton, ID
+ Diversions from Falls R nr Ashton to Chester, ID

Falls R nr Ashton, ID
+ Grassy Lake (Storage Change)
+ Diversions from Falls R abv nr Ashton, ID

Teton R nr Driggs, ID - No Corrections

Teton R nr St. Anthony, ID
- Cross Cut Canal into Teton R
+ Sum of Diversions for Teton R abv St. Anthony, ID

Snake R nr Moran, WY
+ Jackson Lake (Storage Change)

Pacific Ck at Moran, WY – No Corrections

Buffalo Fork ab Lava Ck nr Moran, WY – No Corrections

Gros Ventre R at Kelly, WY – No Corrections

Snake R abv Palisades, WY
+ Jackson Lake (Storage Change)
Greys R abv Palisades, WY – No Corrections
Salt R abv Palisades, WY – No Corrections
Snake R nr Irwin, ID
+ Jackson Lake (Storage Change)
+ Palisades Resv (Storage Change)
Snake R nr Heise, ID
+ Jackson Lake (Storage Change)
+ Palisades Resv (Storage Change)
Willow Ck nr Ririe, ID
+ Ririe Resv (Storage Change)
Blackfoot Resvervoir Inflow, ID
+ Blackfoot Reservoir releases
+ Blackfoot Resv (Storage Change
Portneuf R at Topaz, ID - No Corrections
Snake River at Neeley, ID
+ Snake River at Neeley (observed)
+ All Corrections made for Henrys Fk nr Rexburg, ID
+ Jackson Lake (Storage Change)
+ Palisades Resv (Storage Change)
+ Diversions from Snake R btw Heise and Shelly
+ Diversions from Snake R btw Shelly and Blackfoot

Southside Snake River Basins

Oakley Resv Inflow, ID
+ Goose Ck abv Trapper Ck
+ Trapper Ck nr Oakley
(Does not include inflow from Birch Creek)
Salmon Falls Ck nr San Jacinto, NV - No Corrections
Bruneau R nr Hot Springs, ID - No Corrections
Owyhee R nr Gold Ck, NV
+ Wildhorse Resv (Storage Change)
Owyhee R nr Rome, OR – No Corrections
Owyhee R blw Owyhee Dam, OR
+ Owyhee R blw Owyhee Dam, OR (observed)
+ Owyhee Resv (Storage Change)
+ Diversions to North and South Canals
Snake R at King Hill, ID - No Corrections
Snake R nr Murphy, ID - No Corrections
Snake R at Weiser, ID - No Corrections
Snake R at Hells Canyon Dam, ID
+ Brownlee Resv (Storage Change)

Bear River Basin

Bear R nr UT-WY Stateline, UT – No Corrections
Bear R abv Resv nr Woodruff, UT – No Corrections
Smiths Fork nr Border, WY - No Corrections
Bear R blw Stewart Dam nr Montpelier, ID
+ Bear R blw Stewart Dam
+ Rainbow Inlet Canal

Reservoir Capacity Definitions (Units in 1,000 Acre-Feet, KAF)

Different agencies use various definitions when reporting reservoir capacity and contents. Reservoir storage terms include dead, inactive, active, and surcharge storage. This table lists volumes for each reservoir, and defines the storage volumes NRCS uses when reporting capacity and current storage. In most cases, NRCS reports usable storage, which includes active and inactive storage. **(Revised Dec. 2005)**

Basin/ Reservoir	Dead Storage	Inactive Storage	Active Storage	Surcharge Storage	NRCS Capacity	NRCS Capacity Includes
Panhandle Region						
Hungry Horse	39.73	---	3451.00	---	3451.0	Active
Flathead Lake	Unknown	---	1791.00	---	1791.0	Active
Noxon Rapids	Unknown	---	335.00	---	335.0	Active
Pend Oreille	406.20	112.40	1042.70	---	1561.3	Dead+Inactive+Active
Coeur d'Alene	---	13.50	225.00	---	238.5	Inactive+Active
Priest Lake	20.00	28.00	71.30	---	119.3	Dead+Inactive+Active
Clearwater Basin						
Dworshak	---	1452.00	2016.00	---	3468.0	Inactive+Active
Weiser/Boise/Payette Basins						
Mann Creek	1.61	0.24	11.10	---	11.1	Active
Cascade	---	46.70	646.50	---	693.2	Inactive+Active
Deadwood	---	---	161.90	---	161.9	Active
Anderson Ranch	24.90	37.00	413.10	---	450.1	Inactive+Active
Arrowrock	---	---	272.20	---	272.2	Active
Lucky Peak	---	28.80	264.40	13.80	293.2	Inactive+Active
Lake Lowell	7.90	5.80	159.40	---	165.2	Inactive+Active
Wood/Lost Basins						
Magic	Unknown	---	191.50	---	191.5	Active
Little Wood	---	---	30.00	---	30.0	Active
Mackay	0.13	---	44.37	---	44.4	Active
Upper Snake Basin						
Henrys Lake	---	---	90.40	---	90.4	Active
Island Park	0.40	---	127.30	7.90	135.2	Active+Surcharge
Grassy Lake	---	---	15.18	---	15.2	Active
Jackson Lake	Unknown	---	847.00	---	847.0	Active
Palisades	44.10	155.50	1200.00	---	1400.0	Dead+Inactive+Active
Ririe	4.00	6.00	80.54	10.00	80.5	Active
Blackfoot	---	---	348.73	---	348.7	Active
American Falls	---	---	1672.60	---	1672.6	Active
Southside Snake Basins						
Oakley	---	---	75.60	---	75.6	Active
Salmon Falls	48.00	5.00	182.65	---	182.6	Active+Inactive
Wildhorse	---	---	71.50	---	71.5	Active
Owyhee	406.83	---	715.00	---	715.0	Active
Brownlee	0.45	444.70	975.30	---	1420.0	Inactive+Active
Bear River Basin						
Montpelier Creek	0.21	---	3.84	---	4.0	Dead+Active
Bear Lake	5.0 MAF	119.00	1302.00	---	1421.0	Active+Inactive: Includes 119 that can be released

Interpreting Water Supply Forecasts

Introduction
Each month, five forecasts are issued for each forecast point and each forecast period. Unless otherwise specified, all streamflow forecasts are for streamflow volumes that would occur naturally without any upstream influences. Water users need to know what the different forecasts represent if they are to use the information correctly when making operational decisions. The following is an explanation of each of the forecasts.

90 Percent Chance of Exceedance Forecast. There is a 90 percent chance that the actual streamflow volume will exceed this forecast value, and there is a 10 percent chance that the actual streamflow volume will be less than this forecast value.

70 Percent Chance of Exceedance Forecast. There is a 70 percent chance that the actual streamflow volume will exceed this forecast value, and there is a 30 percent chance that the actual streamflow volume will be less than this forecast value.

50 Percent Chance of Exceedance Forecast. There is a 50 percent chance that the actual streamflow volume will exceed this forecast value, and there is a 50 percent chance that the actual streamflow volume will be less than this forecast value. Generally, this forecast is the middle of the range of possible streamflow volumes that can be produced given current conditions.

30 Percent Chance of Exceedance Forecast. There is a 30 percent chance that the actual streamflow volume will exceed this forecast value, and there is a 70 percent chance that the actual streamflow volume will be less than this forecast value.

10 Percent Chance of Exceedance Forecast. There is a 10 percent chance that the actual streamflow volume will exceed this forecast value, and there is a 90 percent chance that the actual streamflow volume will be less than this forecast value.

*Note: There is still a 20 percent chance that actual streamflow volumes will fall either below the 90 percent exceedance forecast or above the 10 percent exceedance forecast.

These forecasts represent the uncertainty inherent in making streamflow predictions. This uncertainty may include sources such as: unknown future weather conditions, uncertainties associated with the various prediction methodologies, and the spatial coverage of the data network in a given basin.

30-Year Average. The 30-year average streamflow for each forecast period is provided for comparison. The average is based on data from 1971-2000. The % AVG. column compares the 50% chance of exceedance forecast to the 30-year average streamflow; values above 100% denote when the 50% chance of exceedance forecast would be greater than the 30-year average streamflow.

AF - Acre-feet, forecasted volume of water are typically in thousands of acre-feet.

These forecasts are given to users to help make risk-based decisions. Users can select the forecast corresponding to the level of risk they are willing to accept in order to minimize the negative impacts of having more or less water than planned for.

To Decrease the Chance of Having Less Water than Planned for
A user might determine that making decisions based on a 50 percent chance of exceedance forecast is too much risk to take (there is still a 50% chance that the user will receive less than this amount). To reduce the risk of .having less water than planned for, users can base their operational decisions on one of the forecasts with a greater chance of being exceeded such as the 90 or 70 percent exceedance forecasts.

To Decrease the Chance of Having More Water than Planned for
A user might determine that making decisions based on a 50 percent chance of exceedance forecast is too much risk to take (there is still a 50% chance that the user will receive more than this amount). To reduce the risk of having more water than planned for, users can base their operational decisions on one of the forecasts with a lesser chance of being exceeded such as the 30 or 10 percent exceedance forecasts.

Using the forecasts - an Example
Using the 50 Percent Exceedance Forecast. Using the example forecasts shown below, there is a 50% chance that actual streamflow volume at the Boise River near Twin Springs will be less than 685 KAF between April 1 and July 31. There is also a 50% chance that actual streamflow volume will be greater than 685 KAF.

Using the 90 and 70 Percent Exceedance Forecasts. If an unexpected shortage of water could cause problems (such as irrigated agriculture), users might want to plan on receiving 610 KAF (from the 70 percent exceedance forecast). There is a 30% chance of receiving *less* than 610 KAF.

Alternatively, if users determine the risk of using the 70 percent exceedance forecast is too great, then they might plan on receiving 443 KAF (from the 90 percent exceedance forecast). There is 10% chance of receiving less than 443 KAF.

Using the 30 or 10 Percent Exceedance Forecasts. If an unexpected excess of water could cause problems (such as operating a flood control reservoir), users might plan on receiving 760 KAF (from the 30 percent exceedance forecast). There is a 30% chance of receiving *more* than 760 KAF.

Alternatively, if users determine the risk of using the 30 percent exceedance forecast is too great, then they might plan on receiving 927 KAF (from the 10 percent exceedance forecast). There is a 10% chance of receiving more than 927 KAF.

Users could also choose a volume in between any of these values to reflect their desired risk level.

Weiser, Payette, Boise River Basins
Streamflow Forecasts – January 2006

Forecast Point	Forecast Period	Chance of Exceeding * 90% (1000AF)	70% (1000AF)	50% (1000 AF)	50% (% AVG.)	30% (1000AF)	10% (1000AF)	30-Yr Avg. (1000AF)
SF PAYETTE RIVER at Lowman	APR-JUL	329	414	471	109	528	613	432
	APR-SEP	369	459	521	107	583	673	488
BOISE RIVER near Twin Springs (1)	APR-JUL	443	610	685	109	760	927	631
	APR-SEP	495	670	750	109	830	1005	690

*90%, 70%, 30%, and 10% chances of exceeding are the probabilities that the actual flow will exceed the volumes in the table

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